



UNIVERSITY OF SWAZILAND

2nd SEM. 2016/2017

FINAL EXAMINATION PAPER

PROGRAMME: B.Sc. ANIMAL SCIENCE YEAR 2
B.Sc. ANIMAL SCIENCE (DAIRY OPTION) YEAR 2

COURSE CODE: ASC 204

TITLE OF PAPER: RANGE MANAGEMENT

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3)
QUESTIONS

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CHIEF INVIGILATOR**

QUESTION 1

(a) Using **TWO (2)** examples of invasive plant species, briefly discuss the damaging effects of invasive plants on rangelands. (9 Marks)

(b) Assume you have been contracted to calculate the carrying capacity of one of the private ranches in the Lowveld of Swaziland; the ranch measures 1 502 ha. You go out and take 105 samples using a 100 cm by 50 cm metal frame; you get an average of 297 g DM.

(i) Calculate production in kg DM per ha of this ranch. (4 Marks)

(ii) Calculate how many 400 kg beef cattle can be grazed year-long in this ranch. (6 Marks)

(iii) If the animals would have to travel a distance of 2.2 km to get water, what would be the carrying capacity of the above ranch? (3 Marks)

(iv) In addition to the travelling distance in (iii) above, if the percent slope of the ranch is 7 percent, what would be the carrying capacity of this ranch? (3 Marks)

QUESTION 2

(a) In about 2-3 complete sentences each, outline the **FOUR (4)** grazing management principles. (12 Marks)

(b) Using an arrow diagram, show the classification of range plants. (13 Marks)

QUESTION 3

(a) In a Table form, contrast light-moderate grazing with heavy grazing. (9 Marks)

(b) Given in Table 1 below is range condition determined at two different periods. Using this information, fill in the missing spaces to describe range trend and recommended action that management needs to adopt. (16 Marks)

TRANSFER THE TABLE INTO YOUR ANSWER BOOKLET.

Table 1. Range condition and range trend.

Range condition (%)		Mention what the range trend is.	What should management do?
Period 1	Period 2		
18	20		
72	74		
74	50		
48	71		

QUESTION 4

- (a) Define and illustrate the concept of rotational grazing. (7 Marks)
- (b) Outline both the advantages and disadvantages of this grazing system. (18 Marks)

QUESTION 5

Write short notes on FIVE (5) range indicators of overgrazing. (25 Marks)